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09/612,132

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EXAMINER

ODOM, CURTIS B

ART UNIT

PAPER NUMBER

2634

DATE MAILED: 05/10/2004

9

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|-----------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/612,132 | NOHLGREN ET AL. | |
| | Examiner | Art Unit | |
| | Curtis B. Odom | 2634 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-10,12-27 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-10,12-16,22-27 and 29-37 is/are rejected.
- 7) ☒ Claim(s) 17-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 29 recites the limitation "the CPU ticks per seconds. There is insufficient antecedent basis for this limitation in the claim.
3. Claim 31 recites the limitation "said estimation units (CCU, SEU)". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 32-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (previously cited in Office Action 11/21/03).

Regarding claim 32, Taniguchi et al. discloses a method for sending information data between at least two transceivers in a telecommunication system (column 4, lines 41-46, wherein

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the transmitter and receiver are implemented in transceivers), wherein the information data is transmitted from the sending side of a transceiver to the receiving side of one or more other transceivers (column 4, line 47-column 5, line 11) in the form of digital signals having a given sampling frequency (column 15, lines 31-34), which signals are played out at the receiving side in a controlled way (column 20, lines 9-17, comprising the following steps:

estimation (Fig.1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency at the sending side;

transmitting (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) the estimation to the receiving side; and

controlling (Fig. 7, block 305, column 31-56) the play-out of the received data at the receiving side by means of the sampling rate transmitted by the sending side to avoids delays in the presentation, wherein the method is performed in two-way communication between at least two transceivers, wherein the transmitter and receiver of Tanguchi are combined in two transceivers, in such a way that

an estimation (Fig.1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency is performed at the sending side of the first transceiver,

the estimation is transmitted (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) to the receiving side of a second transceiver,

the playing out (Fig. 7, block 305, column 31-56) of the received data is controlled at the receiving side of the second transceiver by means of the sampling rate estimated at the sending side of the first transceiver.

Taniguchi et al. does not disclose the estimation of the sampling rate estimated at the sending side of the first transceiver is used by the second transceiver in the transmitting of messages from the second transceiver to the first transceiver in the communication between the transceivers. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature to create synchronization between the transceivers without having to transmit a sampling frequency to the first transceiver or include a sample rate conversion apparatus in the first transceiver. This would simplify the device and lessen the cost of operation of the device.

Regarding claim 33, Taniguchi et al. discloses a method for sending information data between at least two transceivers in a telecommunication system (column 4, lines 41-46, wherein the transmitter and receiver are implemented in transceivers), wherein the information data is transmitted from the sending side of a transceiver to the receiving side of one or more other transceivers (column 4, line 47-column 5, line 11) in the form of digital signals having a given sampling frequency (column 15, lines 31-34), which signals are played out at the receiving side in a controlled way (column 20, lines 9-17, comprising the following steps:

estimation (Fig.1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency at the sending side;

transmitting (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) the estimation to the receiving side; and

controlling (Fig. 7, block 305, column 31-56) the play-out of the received data at the receiving side by means of the sampling rate transmitted by the sending side to avoids delays in the presentation.

Taniguchi et al. does not disclose the estimation of the sampling rate is carried out in form of a calculation based on time measured between two events, and the number of samples that has been sampled between the two events. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that how the sampling rate is estimated is a design choice. Counting the number of samples in a time period and then dividing the number of samples by the time period would allow one to obtain a **frequency** of how often the data is being sampled (samples per unit time) Thus, claim 33 does not constitute patentability.

Regarding claim 34, Taniguchi et al. discloses a method for sending information data between at least two transceivers in a telecommunication system (column 4, lines 41-46, wherein the transmitter and receiver are implemented in transceivers), wherein the information data is transmitted from the sending side of a transceiver to the receiving side of one or more other transceivers (column 4, line 47-column 5, line 11) in the form of digital signals having a given sampling frequency (column 15, lines 31-34), which signals are played out at the receiving side in a controlled way (column 20, lines 9-17, comprising the following steps:

estimation (Fig.1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency at the sending side;

transmitting (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) the estimation to the receiving side; and

controlling (Fig. 7, block 305, column 31-56) the play-out of the received data at the receiving side by means of the sampling rate transmitted by the sending side to avoids delays in the presentation.

Taniguchi et al. does not disclose the estimation is carried out at a time synchronization event. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that as long as the estimation was calculated before the transmission of the data signal that the estimation could have taken place at a time synchronization event. Thus, the time at which the estimation is calculated is deemed a design choice and does not constitute patentability.

Regarding claim 35, Taniguchi et al. discloses a method for sending information data between at least two transceivers in a telecommunication system (column 4, lines 41-46, wherein the transmitter and receiver are implemented in transceivers), wherein the information data is transmitted from the sending side of a transceiver to the receiving side of one or more other transceivers (column 4, line 47-column 5, line 11) in the form of digital signals having a given sampling frequency (column 15, lines 31-34), which signals are played out at the receiving side in a controlled way (column 20, lines 9-17, comprising the following steps:

estimation (Fig. 1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency at the sending side;

transmitting (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) the estimation to the receiving side; and

controlling (Fig. 7, block 305, column 31-56) the play-out of the received data at the receiving side by means of the sampling rate transmitted by the sending side to avoids delays in the presentation.

Taniguchi et al. does not disclose the status of a soundboard buffer is polled before estimation, continuously or in connection with specific events. However it would have been

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obvious to one of ordinary skill in the art at the time the invention was made that the status of a buffer can be checked throughout the operation of a device (see Polge et al., U.S. Patent No. 5,790, 893, column 3, line 61-column 4, line 56). Thus, claim 23 does not constitute patentability.

Regarding claim 36, Taniguchi et al. discloses a method for sending information data between at least two transceivers in a telecommunication system (column 4, lines 41-46, wherein the transmitter and receiver are implemented in transceivers), wherein the information data is transmitted from the sending side of a transceiver to the receiving side of one or more other transceivers (column 4, line 47-column 5, line 11) in the form of digital signals having a given sampling frequency (column 15, lines 31-34), which signals are played out at the receiving side in a controlled way (column 20, lines 9-17, comprising the following steps:

estimation (Fig. 1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency at the sending side;

transmitting (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) the estimation to the receiving side; and

controlling (Fig. 7, block 305, column 31-56) the play-out of the received data at the receiving side by means of the sampling rate transmitted by the sending side to avoids delays in the presentation.

Taniguchi et al. does not disclose the estimation is carried out by means or a moving average of the last few estimations. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that how the sampling rate is estimated is a design choice. Thus, claim 36 does not constitute patentability.

Regarding claim 37, the claimed apparatus includes features corresponding to the above rejection of claim 36, which is applicable hereto, except the means for transmitting the estimation to the receiving side comprises a Sampling Frequency Distribution Unit. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that since the Sampling Frequency Distribution Unit is simply used to transmit the estimated sampling frequency in the same manner as the transmitter of Taniguchi et al. that it could have been implemented into the device of Taniguchi et al. and Ott as a transmitter. Thus using a Sampling Frequency Distribution Unit to transmit the signal is deemed a design choice and does not constitute patentability.

6. Claims 1-3, 5-10, 12-16, 22-27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taniguchi et al. (previously cited in Office Action 11/21/03) in view of Ott (U.S. Patent No. 6, 084, 916).

Regarding claim 1, Taniguchi et al. discloses a method for sending information data between at least two transceivers in a telecommunication system (column 4, lines 41-46, wherein the transmitter and receiver are implemented in transceivers), wherein the information data is transmitted from the sending side of a transceiver to the receiving side of one or more other transceivers (column 4, line 47-column 5, line 11) in the form of digital signals having a given sampling frequency (column 15, lines 31-34), which signals are played out at the receiving side in a controlled way (column 20, lines 9-17, comprising the following steps:

estimation (Fig.1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency at the sending side;

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transmitting (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) the estimation to the receiving side; and

controlling (Fig. 7, block 305, column 31-56) the play-out of the received data at the receiving side by means of the sampling rate transmitted by the sending side to avoid delays in the presentation, wherein it is obvious that the sampling rate is used to control the play of the audio data at the receiver end.

Taniguchi et al. does not disclose controlling the play-out of received data at the receiving side by means of the sampling rate estimated at the sending side is carried out by estimation of the receiver's sampling frequency at the receiving side and performing compensation of the difference in the estimated sampling frequencies at the sending and receiving sides by a sample rate conversion method.

Ott discloses controlling (Fig. 2, block 200, column 4, line 7-column 5, line 17) the play-out of received data at the receiving side by means of an estimated sending side sampling rate (FT) is carried out by estimation of the receiver's sampling frequency (FR) at the receiving side and performing compensation (column 4, lines 24-50) of the difference in the estimated sampling frequencies at the sending and receiving sides by a sample rate conversion method.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the receiver of Taniguchi et al. with the sampling rate conversion method and apparatus of Ott to allow the play-out of the received data to be free from sample slippage which could cause intermittent loss of data and phase noise at the receiver (Ott, column 4, lines 41-67).

Regarding claim 2, which inherits the limitations of claim 1, Taniguchi et al. discloses the information data is sent in the form of packet data frames (column 14, lines 51-64).

Regarding claim 3, which inherits the limitations of claim 3, Taniguchi et al. discloses the packet data frames are audio frames (column 14, lines 51-64).

Regarding claim 5, which inherits the limitations of claim 1, Taniguchi et al. and Ott do not disclose in the conversion method the amount of samples in the packet frames are changed. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that since the sampling rate conversion changes the sampling frequency, the amount of samples in the packet frames would also be changed in accordance with the sampling rate conversion. Thus, claim 5 does not constitute patentability.

Regarding claim 6, which inherits the limitations of claim 1, Ott further discloses the controlling of the play-out of received data at the receiving side by means of the sampling rate estimated at the sending side is carried out by synchronizing the receiver's sampling rate to the sender's sampling rate (column 4, lines 35-50).

Regarding claim 7, which inherits the limitations of claim 6, Taniguchi et al. discloses a synchronization (clock recovery) is carried out by means of a PLL (column 14, lines 10-21).

Regarding claim 8, which inherits the limitations of claim 1, Taniguchi et al. discloses the method is performed in two-way communication between at least two transceivers, wherein the transmitter and receiver of Taniguchi are combined in two transceivers in such a way that

an estimation (Fig. 1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency is performed at the sending side of the first transceiver,

the estimation is transmitted (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) to the receiving side of a second transceiver,

the playing out (Fig. 7, block 305, column 31-56) of the received data is controlled at the receiving side of the second transceiver by means of the sampling rate estimated at the sending side of the first transceiver.

Taniguchi et al. does not disclose the estimation of the sampling rate estimated at the sending side of the first transceiver is used by the second transceiver in the transmitting of messages from the second transceiver to the first transceiver in the communication between the transceivers. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include this feature to create synchronization between the transceivers without having to transmit a sampling frequency to the first transceiver or include a sample rate conversion apparatus in the first transceiver. This would simplify the device and lessen the cost of operation of the device.

Regarding claim 9, which inherits the limitations of claim 1, Taniguchi et al. discloses discloses the method is performed in two-way communication between at least two transceivers, wherein the transmitter and receiver of Tanguchi are combined in two transceivers in such a way that

an estimation (Fig. 1, block 107, column 9, line 59-column 10, line 19) of the sender's sampling frequency is performed at the sending side of the first transceiver,

the estimation is transmitted (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE) to the receiving side of a second transceiver,

the playing out (Fig. 7, block 305, column 31-56) of the received data is controlled at the receiving side of the second transceiver by means of the sampling rate estimated at the sending side of the first transceiver.

However, Taniguchi et al. does not disclose the steps of the method above are performed when transmitting data from the second transceiver to the first transceiver. However, it would have been obvious to one skilled in the art at the time the invention was made that the method could have been implemented in the same manner for transmitting from the second transceiver to the first transceiver as it was implemented for transmitting from the first transceiver to the second transceiver. Thus, claim 9 does not constitute patentability.

Regarding claim 10, which inherits the limitations of claim 1, Taniguchi et al. and Ott do not disclose the transmitting of the estimation is done at call setup so the received data can immediately be used at the receiving side to avoid initial delays in the compensation before the presentation. However it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform compensation for the sampling rate before the reception of data to avoid sample slippage as taught by Ott. Thus, the time at which the sampling estimation is transmitted is deemed a design choice and does not constitute patentability.

Regarding claim 12, which inherits the limitations of claim 1, Taniguchi et al. discloses the sampling rate is either or both incorporated in regular reports within standard control packets or transmitted as separate reports within individual packets (column 14, line 51-column 15, line 46).

Regarding claim 13-16, which inherit the limitations of claim 1, Taniguchi et al. and Ott do not disclose the estimation of the sampling rate is carried out in form of a calculation based on

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time measured between two events, such as two frame delivers of packet data or two time synchronization events, wherein a time synchronization events is a host clock synchronizing to an external clock, and the number of samples that has been sampled between the two events. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that how the sampling rate is estimated is a design choice. Counting the number of samples in a time period and then dividing the number of samples by the time period would allow one to obtain a **frequency** of how often the data is being sampled (samples per unit time). Thus, claims 13-16 does not constitute patentability.

Regarding claim 22, which inherits the limitations of claim 1, Taniguchi et al. and Ott do not disclose the estimation is carried out at a time synchronization event. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that as long as the estimation was calculated before the transmission of the data signal that the estimation could have taken place at a time synchronization event. Thus, the time at which the estimation is calculated is deemed a design choice and does not constitute patentability.

Regarding claim 23, which inherits the limitations of claim 1, Taniguchi et al. and Ott do not disclose the status of a soundboard buffer is polled before estimation, continuously or in connection with specific events. However it would have been obvious to one of ordinary skill in the art at the time the invention was made that the status of a buffer can be checked throughout the operation of a device (see Polge et al., U.S. Patent No. 5, 790, 893, column 3, line 61-column 4, line 56). Thus, claim 23 does not constitute patentability.

Regarding claim 24, which inherits the limitations of claim 23, Taniguchi et al. and Ott do not disclose the estimation is carried out by means of the time difference between time values

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at two synchronization events and the time difference between two reference time values at the same events. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that how the sampling rate is estimated is a design choice. Thus, claim 24 does not constitute patentability.

Regarding claim 25, which inherits the limitations of claim 1, Taniguchi et al. and Ott do not disclose the estimation is carried out by means or a moving average of the last few estimations. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that how the sampling rate is estimated is a design choice. Thus, claim 25 does not constitute patentability.

Regarding claim 26, which inherits the limitations of claim 1, Taniguchi et al. and Ott do not disclose the estimation process is performed continuously. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that estimation must be performed every time an audio signal is transmitted since the estimation is transmitted with the signal (Fig. 1 and Fig. 15(a), column 14 lines 51-64 and column 15, lines 22-46, RATE). Thus, claims 26 does not constitute patentability.

Regarding claim 27, the system includes features corresponding to the above rejection of claim 1 which is applicable hereto.

Regarding claim 30, which inherits the limitations of claim 27, Taniguchi et al. and Ott do not disclose the means for transmitting the estimation to the receiving side comprises a Sampling Frequency Distribution Unit. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made that since the Sampling Frequency Distribution Unit is simply used to transmit the estimated sampling frequency in the same manner as the

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transmitter of Taniguchi et al. and Ott that it could have been implemented into the device of Taniguchi et al. and Ott as a transmitter. Thus using a Sampling Frequency Distribution Unit to transmit the signal is deemed a design choice and does not constitute patentability.

Allowable Subject Matter

7. Claims 17-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McNally et al. (U.S. Patent No. 4, 564, 918) discloses a method and apparatus for measuring the time difference between two sampling times.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 703-305-4097. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
April 27, 2004



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SUPERVISORY PATENT EXAMINER
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